



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,219	06/09/2005	Herbert Friedrich Boerner	DE 020314	9419
24737 7590 05/28/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
			EXAMINER WILSON, MICHAEL H	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 05/28/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/538,219

Applicant(s)

BOERNER, HERBERT FRIEDRICH

Examiner

MICHAEL WILSON

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action is in response to Applicant's amendment filed 19 March, 2008, which amends claims 2-7 and adds claims 8-18.

Claims 1-18 are pending.

2. The rejection of claims 4 and 5 under 25 U.S.C. 112(2nd) is overcome by Applicant's amendment filed 19 March, 2008.

Claim Objections

3. Claims 7, 8, and 16-18 are objected to because the claims are in an improper Markush group format. A Markush-type claim recites alternatives in a format such as "wherein R is a material selected from the group consisting of A, B, C and D" or "wherein R is A, B, C or D." See Ex parte Markush, 1925 C.D. 126 (Comm'r Pat.1925). See MPEP 2173.05(h). Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1794

5. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 15, "a biphenyl multiply substituted in the meta position" renders the claim indefinite; multiple substituents cannot be placed on a single meta position. Suggested correction is to amend "a biphenyl multiply substituted in the meta position" to "a biphenyl substituted at multiple meta positions" or "biphenyl substituted at more than one meta position." Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ise et al. (US 2002/0028329 A1).

Regarding claims 1, and 9-11, Ise et al. discloses an organic electroluminescent component having a layer composite, which comprises:

- a substrate layer [0180],
- a first transparent electrode layer ([0010] and [0172]),

- a mixing layer (light emitting layer [0009]) having
 - o a matrix of a conductive organic material with one or more singlet states and one or more triplet states, selected from the group: p-conductive and n-conductive materials ([0010]),
 - o in this matrix, a light-emitting material which comprises a metallo-organic complex compound with an emissive triplet state [0149], and
- a second electrode [0010],
- -wherein the lowest-energy triplet state of the conductive organic material is higher than the emissive triplet state of the metallo-organic complex compound by an energy difference E_t . ([00029] and [0010]).

Regarding claims 2 and 12, Ise et al. discloses an organic electroluminescent device as set forth above and further characterized in that the energy difference is $E_t \geq 2000 \text{ cm}^{-1}$ (see chart [0195] examples 2, 4-6, and 8-10; Ise measured the T_1 energy level of both host and light-emitting material in kcal/mol - [0032], and examples 2 [0181], 4 [0183], 5 [0184], 6 [0185], 8 [0187], 9 [0188], and 10 [0189]).

Regarding claims 3 and 13, Ise et al. discloses the device as set forth above and characterized in that the conductive organic material comprises a structural element which is a benzene ring substituted with an organic substituent R- in the meta position ([0181] and multiple compounds exemplified in [0119]).

Regarding claims 4, 5, 14, and 15, Ise et al. discloses the device as set forth above and characterized in that:

- the conductive organic material comprises a structural element which is a biphenyl substituted with an organic substituent R- in the meta position (exemplified compounds: [0120] B-1, B-3 to B-6, B-16, B-24, B-25, B-30, B-50, B-51, B-54; [0128] C-32; [0135] D-32; and [0137] D-52);
- the structural element which is a biphenyl multiply substituted in the meta position (exemplified compounds: [0120] B-1, B-3 to B-6, B-16, B-24, B-25, B-30, B-50, B-51, B-54; [0128] C-32; [0135] D-32; and [0137] D-52).

Regarding claims 6 and 16, Ise et al. disclose an organic electroluminescent device as set forth above, characterized in that that the conductive organic material is selected from the group: molecularly doped organic polymers, semi-conducting conjugated polymers, intrinsically conductive organic polymers, oligomers, and conductive organic monomers, and mixtures thereof (general formula given in [0012]-0013] and [0045] with a multitude of examples in [0119]-[0139]).

Regarding claims 7 and 17, Ise et al. discloses an organic electroluminescent device as set forth above and characterized in that the substituent R- is selected from the group of organic substituents: phenyl and derivatives, arylamine and derivatives, oxadiazole and derivatives, triazole and derivatives, triphenylamine and derivatives, carbazole and derivatives, oxadiazoles and derivatives, triazoles and derivatives, triazines and derivatives, fluorenes and derivatives, hexaphenylbenzene and derivatives, phenanthroline and derivatives, pyridine and derivatives ([0034]-[0035] with

explicit examples in [0119] which including the use of carbazole, diazoles, triazole, pyrroles, substituted phenyl, oxazole, and thiazole substituents).

Regarding claims 8 and 18, Ise et al. disclose all the claim limitations as set forth above. Additionally the reference discloses wherein the substituent R is selected from the group of organic substituents: phenyl and derivatives (exemplified compounds: [0120] B-1, B-3 to B-6, B-24, B-25, B-30, B-50, B-51, B-54; [0128] C-32; [0135] D-32; and [0137] D-52).

Response to Arguments

8. Applicant's arguments filed 19 March, 2008 have been fully considered but they are not persuasive.

Applicant argues that Ise et al. fails to disclose p-conductive and n-conductive materials with one or more singlet and triplet states. This argument is not persuasive because "singlet" and "triplet" are terms used to describe spin multiplicity and typically are determined using L-S or Russell-Saunders coupling scheme, which is an approximation that describes the total orbital angular momentum of the electrons in a compound, these are not determined from the Hamiltonian. The spin multiplicity of ground and excited states are inherent to the compound. Further it is known that within the genus disclosed by Ise et al. the compounds possess both singlet and triplet states as evidenced by Holmes et al. (Blue organic electroluminescence using exothermic host-guest energy transfer. page 2423, column 1, lines 12-13, and page 2424, column 1, lines 15-17), and that substituted benzenes in general possess both states as

evidenced by Brown et al. (Quenching of the first excited singlet state of substituted benzene by nitric oxide. page 1438, first paragraph). Holmes et al. discusses mCp, a compound within the scope of Ise et al. and the substituted benzenes of Brown et al. are disclosed by Ise et al. The Office Action mailed 20 December, 2007 pointed to [0010] of Ise et al. to indicate that such states are well known and inherent properties of the conductive organic materials used as matrix compounds, which is further explained above.

Applicant also argues that Ise et al. does not qualify as a reference because it teaches away from that which is claimed. This argument is not persuasive because arguments that the alleged anticipatory prior art teaches away from the invention is not germane to a rejection under section 102 (*In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986). See also *State Contracting & Eng 'g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1068, 68 USPQ2d 1481, 1488 (Fed. Cir. 2003) (The question of whether a reference is analogous art is not relevant to whether that reference anticipates. A reference may be directed to an entirely different problem than the one addressed by the inventor, or may be from an entirely different field of endeavor than that of the claimed invention, yet the reference is still anticipatory if it explicitly or inherently discloses every limitation recited in the claims.). A reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. The question whether a reference "teaches away" from the invention is inapplicable to an anticipation analysis. *Celeritas Technologies Ltd. v. Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed.

Cir. 1998) (The prior art was held to anticipate the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed."). >See *Upsher-Smith Labs. v. PamLab, LLC*, 412 F.3d 1319, 1323, 75 USPQ2d 1213, 1215 (Fed. Cir. 2005)(claimed composition that expressly excluded an ingredient held anticipated by reference composition that optionally included that same ingredient);< see also *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1349, 51 USPQ2d 1943, 1948 (Fed. Cir. 1999) (Claimed composition was anticipated by prior art reference that inherently met claim limitation of "sufficient aeration" even though reference taught away from air entrapment or purposeful aeration.).

Further while applicant argues singlet and triplet emission, the present claims do not require singlet emission, or in fact any emission from the matrix compound. The claims only require the existence of singlet and triplet states in a conductive organic material used as a matrix with a phosphorescent organometallic complex. Therefore *Ise et al.* does not teach away from the present claims given that the requirement of singlet excitons is not required in the present claims and further given that *Ise et al.* explicitly and inherently discloses every limitation presently claimed.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 1794

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL WILSON whose telephone number is (571) 270-3882. The examiner can normally be reached on Monday-Thursday, 7:30-5:00PM EST, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MHW

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794